

ARTICLE APPEARED
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THE WASHINGTON TIME
16 NOVEMBER 1982

High-tech loss tied to science

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About a third of America's "militarily significant technology" surreptitiously acquired by the Soviet Union comes from academic exchanges, according to a report by the National Academy of Sciences.

The report says most academic leaks are obtained by visiting Eastern European scientists who "abuse" their status and report back to Soviet intelligence.

The academy stresses that most technology losses are the work of Soviet intelligence operatives who obtain some crucial data through "legal buys."

The key areas targeted by Moscow, says the report, are:

- Satellite technology, a subdiscipline of which involves underwater low-light television cameras, laser rangefinders and other electro-optical sensors.

- Navigation and guidance equipment, including inertial-guidance components, miniature gyros and laser gyros.

- Missile technology, including precision ballbearing manufacturing equipment, missile test-range instrumentation system for post-fight analysis, missile guidance subsystems and ground propulsion technology.

- Radars, including laser-related components.

- Communications equipment, including low-power, low-noise, high-sensitivity receivers.

- Computers.

- Signals process manufacturing technology.

- Structural materials, notably titanium and its alloys that go into the manufacturing of airframes and submarines.

The report notes, however, that by the time the Soviet Union has applied the technologies acquired, it has usually been overtaken by new United States developments, and says most militarily beneficial technology "could become available from non-U.S. sources also." It urges that as few restrictions as possible be placed on scientific exchanges.

The report echoes one issued Sunday by the Senate Permanent Investigations Subcommittee, which quotes a Defense Intelligence Agency specialist as saying that "the U.S. research and development establishment is viewed by the Soviet Union as a mother lode ... (and) (Soviet) national asset."

The Senate Report also said that only a minority part of Soviet acquisitions came through scientific exchanges.